Air Force SBIR Advantage

Offering a brief look at the vital research and development contributions made by the Small Business Innovation Research (SBIR) Program in direct support of the Air Force mission.

3rd Quarter 2002

Air Force SBIR Update

by Stephen Guilfoos, Air Force SBIR Program Manager

Research: Worth the Time & Investment?

The old adage, "Do we eat the seed corn or do we sow it for tomorrow's crop?" is just as valid today as it was in the past. Many influential folks are concerned that SBIR is not returning to the Air Force value for our investment. In the short term, that appears to be true. But not any more true than investing in any future technology. There are risks in developing innovation and mitigating those risks takes time. Historically, technology takes an average of 20 years to go from an idea on a piece of paper to an operational capability in the hands of the warfighter.

We won't debate whether the SBIR program has a direct impact on participating small businesses. Most folks agree that it does increase the socio-economic well-being of our country. SBIR contributes to private sector commercialization by creating jobs, stimulating the development of new products and services, and improving the nation's high tech competitiveness.

However, many Air Force programs are taxed to support the funding of SBIR projects. These programs may not see the near-term payoff of their investment. As with most Air Force R&D projects, it will take years to finally insert these SBIR technologies into Air Force systems. We hope that the three years

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The Voices of SBIR

Some insist on viewing the SBIR/STTR as a single $220 million program. But it is more realistically viewed as 220 $1 Million Programs/Projects, all aimed at solving challenging technical problems that will make the Air Force more effective in carrying out its warfighting mission.

The following comments about the value of the SBIR Program are taken from a number of sources including Air Force Project Officers, small business owners, and senior level Air Force managers directly impacted by SBIR technology. Comments have been condensed or clarified where necessary/appropriate.

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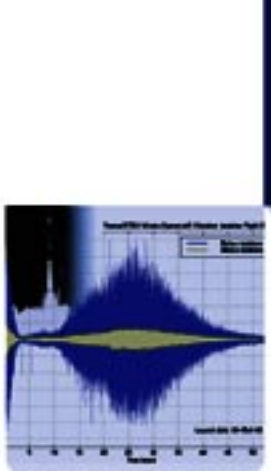

The antenna developed under this SBIR can provide the Air Force a low-cost capability to protect GPS systems against unwanted interference sources, thereby increasing mission effectiveness.

The Air Force's early SBIR commitment to the promise of this technology was critical to our success. We are on the threshold of a new generation of materials with great implications for both aerospace and commercial markets.

These SBIR sponsored technologies are important to the Air Expeditionary Force requirements for protection of our personnel from toxic industrial materials, explosive devices, and chemical/biological agents.

Interpreting the raw data from the digital computer simulations has been a fine art for the engineer, but with this SBIR technology, the task is as easy as hitting the "go" button and watching the weapon fly.

The improvements in material properties that was key to the successful spin-off of this (SBIR supported) nanotechnology into the athletic shoe industry.

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With this (SBIR supported) simulation technology we can now model/simulate fleets of UAVs performing virtually any mission.

Our company's technology has the potential of saving tens of millions of dollars by reducing the dynamic loads on satellites during launch. The SBIR program allowed us to develop this high-risk, high-payoff technology.

BIR

Our success through the Air Force SBIR Program is viewed as the first critical step toward providing asset management for airborne fleets of all types worldwide.

This SBIR technology will make the control of unmanned air vehicles (UAVs) flexible and responsive in real-time, without requiring expensive and scarce piloting skills, meeting the needs of the warfighters.

This (SBIR supported) technology, providing automated support for intelligence analysts, offers significantly preferable search results and also supports the capability to embed searches within a complete research environment.

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the technology spends under SBIR will lead to accelerated transition and insertion into warfighting capability. By having the laboratory and acquisition communities working closely together, the engineering development cycle can begin shortly after the completion of the SBIR development cycle.

As the real story is not always revealed at the margins, we thought it might be interesting to get a different perspective. A perspective born from being closer to the action. We went to a few Air Force SBIR project managers for their comments on the specific technology project they manage and asked them what this technology means for tomorrow's Air Force.

The Voices

Inside this issue of the *SBIR Advantage*, we departed from our normal layout and included views from various individuals, from both the Air Force and small businesses.

For example, discussing Geneva Aerospace's work in developing the Variable Autonomy Control System for UAVs, Andrew Probert, SBIR Project Officer said, "In the future, the use of unmanned air vehicles (UAVs) will expand to new roles beyond reconnaissance and surveillance, into real-time targeting and even weapon delivery. This technology will make the control of UAVs flexible and responsive in real-time, without requiring expensive and scarce piloting skills, meeting the needs of the warfighters."

Commenting on Nomadics, Inc.'s development of portable electrochemical sensors for environmental monitoring, Bruce Nielsen, SBIR Project Officer said, "The technologies Nomadics is developing are important to the Air Expeditionary Force requirements for protection of our personnel from toxic industrial materials, explosive devices, and chemical/biological agents."

Conclusion

The prospect of spending precious program resources on future technology, that may or may not be selected for insertion into a system, is frustrating.

Indeed, the short-term view is painful but the long-term view of supporting R&D to create a legacy for the future has proven itself in the development of the world's most advanced Air Force.

Source of SBIR/STTR Funding

SBIR/STTR Tax Distribution by Program Element (PE)

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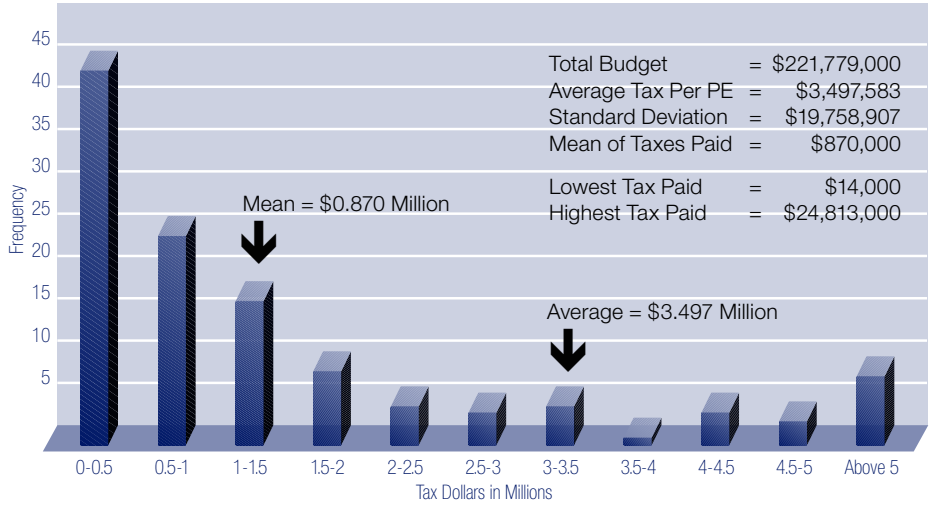

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Science and Technology for Tomorrow's Aerospace Forces

Air Force SBIR Advantage

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The goal of the Air Force SBIR Program is to serve the technology needs of Air Force warfighters. It accomplishes its mission as part of the Air Force Research Laboratory's (AFRL) integrated research and development (R&D) team. AFRL's mission is leading the discovery, development, and integration of affordable warfighting technologies for our aerospace forces.

SBIR Advantage is published quarterly by the Air Force SBIR Program office. This publication offers an overview of AF SBIR issues and information. The purpose of *SBIR Advantage* is to provide Air Force, DoD, and other government leadership with additional insight into the vital contributions made by the SBIR program to Air Force R&D.

SBIR Advantage is available online at:
www.afrl.af.mil/sbir